

PROCEDURE 6 - Fire Protection

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Synopsis

The purpose of this procedure is to provide guidelines related to potential fire hazards in the workplace. This procedure applies to all NWS facilities, work locations, and employees.

Initial Implementation Requirements:

- **Analyze Site Operations versus Requirements of the Procedure**
 - Conduct Inspection of Fire Extinguishers and other Systems (6.3.1j, Attachment C)
 - Evaluate major Fire Hazards (6.3.2a.1, Attachment C)
 - Inventory Flammable/Combustible Materials (6.3.2a, Attachment C)
- **Develop/Obtain Documentation/Information required for Site**
 - Develop Fire Prevention Plan (6.3.2a, Attachment C)
 - Develop written Maintenance Schedule for thermostats and thermal overload devices (6.3.2d)
- **Designate Person to Administer Fire Protection Program Requirements**
 - List personnel responsible for maintenance of equipment and systems used to control fires. (Attachment C)
- **Provide Local Training of Site Personnel**
 - Fire Extinguisher Training (if applicable). (6.3.1o)
 - Fire Hazard Awareness Training. (6.3.2b)
 - Reporting Emergencies Training. (6.3.4d)
- **Inventory Material/Equipment (Procure as required)**
 - Alarm Systems for WFOs (where installed). (6.5.2e, 6.3.4)
 - Fire Extinguishers (as required). (6.5.2e, 6.3.2)
 - Emergency Lights for egress (as required). (6.5.2e, 6.3.5)

Recurring and Annual Task Requirements:

- **Perform Inspection/Assessment/Testing**
 - Perform Monthly Visual and Annual Fire Extinguisher Maintenance Check. (6.3.1l, 6.3.1k)
 - Conduct periodic Hydrostatic Testing of fire Extinguishers. (6.3.1n)
 - Conduct routine Inspections of Thermostats and Thermal Overload Devices. (6.3.2d)
 - Provide testing of Fire Alarm Systems. (where installed) (6.3.4h, k)
 - Conduct periodic Inspection of Electrical Equipment. (Attachment C)
- **Review/Update Documentation/Information required for Site**
 - Maintain Annual Maintenance Inspections Records. (6.3.1m)
 - Update Fire Prevention Plan. (6.3.2)
 - Maintain Training Records. (6.3.2c)
- **Provide Refresher Training of Site Personnel (If Applicable)**
 - Annual Refresher Training for Fire Extinguisher use. (6.3.1o)
- **Conduct Annual Fire Drills**
- **Inspect/Replace/Maintain Material/Equipment**
 - Alarm systems for WFOs (where installed). (6.5.2e, 6.3.4)

- Fire Extinguishers (as required). (6.5.2*e*, 6.3.2)
- Emergency Lights for egress (as required). (6.5.2*e*, 6.3.5)

Fire Protection Checklist

Requirements	Reference	YES	NO	N/A	Comments
Is initial and annual review of this procedure conducted and documented?	6.4.2				
Have personnel been designated to oversee inspections, maintenance and testing of fire extinguishers?	6.3.1j				
Are fire extinguishers properly selected according to the potential fire hazard and the construction and occupancy of the building?	6.3.1b				
Are fire extinguishers readily available for immediate use in case of fire?	6.3.1c				
Are monthly visual inspections of portable fire extinguishers performed and documented using a tag?	6.3.1k				
Is annual maintenance check of fire extinguishers performed?	6.3.1l				
Are written records of maintenance checks kept for one year?	6.3.1m				
Are fire extinguishers hydrostatically tested at periodic intervals based upon the type of extinguisher?	6.3.1n Attachment A				
Are employees trained in fire extinguisher use upon initial employment and annually (if site-specific Emergency Action Plan calls for employees to fight the fire)?	6.3.1o				
Is a Fire Prevention Plan developed and available for employees review?	6.3.2a, Attachment C				

Requirements	Reference	YES	NO	N/A	Comments
Are facility's major fire hazards inventoried and documented as part of Fire Prevention Plan?	Attachment C				
Has personnel been designated to perform maintenance and inspection of equipment and systems used to control the fire?	6.3.1j, Attachment C				
Is a written schedule for maintenance of thermostats and other thermal overload devices developed?	6.3.2d				
Has the awareness training on potential fire hazards associated with materials and processes been provided?	6.3.2b				
Are written records of personnel training kept on file?	6.3.2c				
Is periodic inspection of electrical equipment performed?	Attachment C				
Are routine inspections of thermostats and thermal overload devices performed?	6.3.2d				
Are general fire prevention guidelines outlined in the procedure followed?	6.3.3				
Are monthly inspections of egress paths, combustible/flammable storage areas and general facility housekeeping performed?	6.3.3j				
Are means for reporting the fire established and communicated to the site personnel?	6.3.4b-e				
Are supervised alarm systems tested annually for reliability and adequacy (if applicable)?	6.3.4k				

Requirements	Reference	YES	NO	N/A	Comments
Are non-supervised alarm systems tested every two months (if applicable)?	6.3.4h				
Are fire drills conducted at least annually?	6.3.4m, 5.3.1a(3)				
Are requirements for the building egress met?	6.3.5				

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6 FIRE PROTECTION

6.1 Purpose and Scope

As part of its goal to provide a safe and healthful workplace, the National Weather Service (NWS) is promulgating this procedure related to fire hazards in the workplace. This procedure applies to all NWS facilities, work locations, and employees.

6.2 Definitions

ADA. Americans with Disabilities Act.

Approved. For the purposes of this procedure “approved” shall mean equipment listed or approved by a nationally recognized testing laboratory.

Class A Fire. Fire involving materials such as wood, paper and cloth which produce glowing embers or char.

Class B Fire. Fire involving flammable gases, liquids and greases including gasoline and most hydrocarbon liquids which must be vaporized for combustion to occur.

Class C Fire. Fire in live electrical equipment or in materials near electrically powered equipment.

Class D Fire. Fire involving combustible metals such as magnesium, zirconium, potassium and sodium.

Emergency Action Plan. A plan for a workplace, or parts thereof, describing what procedures the employer and employees must take to ensure employee safety from fire or other emergencies.

Emergency Escape Route. The route that employees are directed to follow in the event they are required to evacuate the workplace or seek a designated refuge area. (See also means of egress, exit, exit access and exit discharge.)

Exit. Exit is that portion of a means of egress which is separated from all other spaces of the building or structure by construction or equipment as required in this subpart to provide a protected way of travel to the exit discharge.

Exit Access. A continuous and unobstructed way of exit from any point in a building or structure to an exit.

Exit Discharge. That portion of a means of egress between the termination of an exit and a public way.

Field Office. A Field Office may include the following: Weather Forecast Office (WFO), River Forecast Center (RFC), Weather Service Office (WSO), and a Data Collection Office (DCO).

Fire. Fire is a rapid oxidation process accompanied by the evolution of heat and light by various degrees.

High-Hazard Contents. Contents which are likely to burn with extreme rapidity, emanate poisonous fumes/vapors or explode in the event of fire.

Loaded Stream. A water-based extinguishing medium that uses an alkali metal salt as a freezing point depressant.

Low Hazard Contents. Contents with such low combustibility that no self-propagating fire can occur and the only probable danger requiring the use of emergency exits will be from panic, non-toxic fumes, or smoke or fire from some external source.

Means of Egress. A means of egress is a continuous and unobstructed way of exit travel from any point in a building or structure to a public way and consists of three separate and distinct parts: the way of exit access, the exit and the way of exit discharge.

NFPA. National Fire Protection Association.

Ordinary Hazard Contents. Contents which are likely to burn with moderate rapidity and to give off a considerable volume of smoke, but from which neither poisonous fumes nor explosions are to be feared in case of fire.

Operating Unit. For the purpose of this procedure, Operating Unit includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), Radar Operations Center (ROC), or the Sterling Research & Development Center (SR&DC).

Station Manager. For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; and Tropical Prediction Center, NP8); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SR&DC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).

Supervised Alarm System. An employee alarm system that has a monitoring signal carried by the wiring from the alarm panel to all detection devices and appliances that will detect a malfunction such as a short or break in the wiring and activate a supervisory alarm or trouble code at the alarm panel.

Tactile Device. A device or piece of equipment that can be perceptible to the touch.

UL. Underwriter's Laboratories.

Unsupervised Alarm System. An alarm system that does not monitor the alarm circuitry.

<p><u>NOTE:</u> <i>All employee alarm systems installed after January 1, 1981 that are capable of being supervised shall be supervised.</i></p>
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6.3 Procedure

6.3.1 Fire Extinguishers. A portable fire extinguisher can be very effective when used for fighting incipient stage fires. Fire extinguishers are provided at all NWS offices and the associated sites. Primarily, these fire extinguishers are classified as ABC-type fire extinguishers, but some may only be classified for BC-type usage. The proper fire extinguisher should be selected, appropriate for the type of fire it is used to extinguish.

- a. Fires are classified into four general categories depending on the type of material or fuel involved. The type of fire determines the type of extinguisher that should be used to extinguish it.
 - (1) Class A fires involve materials such as wood, paper and cloth which produce glowing embers or char.
 - (2) Class B fires involve flammable gases, liquids and greases including gasoline and most hydrocarbon liquids which must be vaporized for combustion to occur.
 - (3) Class C fires involve fires in live electrical equipment or in materials near electrically powered equipment.
 - (4) Class D fires involve combustible metals such as magnesium, zirconium, potassium and sodium.
- b. Extinguishers shall be selected according to the potential fire hazard, the construction and occupancy of facilities, hazard to be dealt with and other factors pertinent to the situation.
- c. Extinguishers shall be conspicuously located and readily accessible for immediate use in the event of fire. They shall be located along normal paths of travel and egress. Wall recesses and/or flush-mounted cabinets shall be used as extinguisher locations whenever possible.
- d. Extinguishers shall be clearly visible. In locations where visual obstruction cannot be completely avoided, directional arrows shall be provided to indicate the location of extinguishers, and the arrows shall be marked with the extinguisher classification.
- e. If extinguishers intended for different classes of fire are located together, they shall be conspicuously marked to ensure that the proper class extinguisher selection is made at the time of a fire. Extinguisher classification markings shall be located on the front of the shell above or below the extinguisher nameplate. Markings shall be of a size and form to be legible from a distance of three (3) feet.

- f. Portable extinguishers shall be maintained in a fully charged and operable condition. They shall be kept in their designated locations at all times when not being used. When extinguishers are removed for maintenance or testing, a comparable fully charged and operable replacement unit shall be provided.
- g. Extinguishers shall be installed on hangers, brackets, or in cabinets. Extinguishers having a gross weight exceeding 40 pounds shall be installed so that the top of the extinguisher is not more than 3½ feet above the floor. Extinguishers less than 40 pounds shall be installed so that the top of the extinguisher is not more than 5 feet above the floor.
- h. Extinguishers mounted in cabinets or wall recesses or set on shelves shall be placed so that the extinguisher operating instructions face outward. The location of such extinguishers shall be made conspicuous by marking the cabinet or wall recess in a contrasting color which shall distinguish it from the normal decor.
- i. Extinguishers shall be distributed in such a way that the amount of time needed to travel to their location and back to the fire does not allow the fire to get out of control. OSHA requires that the travel distance for Class A and Class D extinguishers not exceed 75 feet. The maximum travel distance for Class B extinguishers is 50 feet because flammable liquid fires can get out of control faster than Class A fires. There is no maximum travel distance specified for Class C extinguishers, but they shall be distributed on the basis of appropriate patterns for Class A and B hazards.

NOTE: *It is recommended that the maximum travel distance to any extinguisher not be more than 50 feet.*

- j. Once an extinguisher is selected, purchased and installed, it is the responsibility of the Station Manager or his/her designee to oversee the inspection, maintenance and testing of fire extinguishers to ensure that they are in proper working condition and have not been tampered with or physically damaged.
- k. Portable fire extinguishers shall be visually inspected monthly and be documented using a tag. The monthly inspection shall include such items as:
 - (1) Ensuring the pressure has not leaked from the extinguisher if a pressure gauge is present.
 - (2) Inspecting the hose of the extinguisher to ensure it is not cracked, torn or dry rotted.
 - (3) Ensuring the outlet nozzle is not blocked by a foreign object.
 - (4) Ensuring that the extinguisher is not blocked.

- (5) Ensuring that the extinguisher is properly mounted.
 - (6) Vehicle-mounted extinguishers shall be turned upside down and shaken vigorously to help prevent the powder in the extinguisher from compacting and caking due to vibration from the vehicle.
 - (7) Ensuring that the shell of the extinguisher is not corroded or physically damaged.
 - (8) If applicable, ensuring that safety pull pins are in place.
- l. An annual maintenance check of fire extinguishers shall be performed. This check shall include the following:
- (1) The mechanical parts of the extinguisher.
 - (2) The extinguishing agent used.
 - (3) The means by which the agent is expelled.

NOTE: *An internal examination of non-rechargeable, carbon dioxide or stored pressure fire extinguishers is not required during the annual maintenance check. However, stored pressure extinguishers with a loaded stream shall be disassembled on an annual basis.*

- m. A written record of the annual maintenance check shall be maintained for one year. This is best accomplished with a tag placed upon the extinguisher by the service contractor performing the check.
- n. Fire extinguishers shall be hydrostatically tested at periodic intervals based upon the type of extinguisher. Attachment A provides the hydro-static test intervals for the various type of fire extinguishers.
- o. Where portable fire extinguishers are provided for employee use, an educational program shall be provided to familiarize all employees with the general principles of fire extinguisher use and the hazards involved with incipient-stage fire fighting. The education program (e.g., videotapes, Fire Department training, etc.) shall be provided upon initial employment and at least annually thereafter.

6.3.2 Fire Prevention Plan.

- a. Each facility shall develop and maintain a written Fire Prevention Plan (See Attachment C: Fire Prevention Plan Template) which, at a minimum, contains the following elements:

- (1) A list of the major workplace fire hazards and their proper handling and storage procedures.
 - (2) Potential ignition sources (such as smoking, hot surfaces, welding and others) and their control procedures.
 - (3) A list of the types of fire protection equipment or systems which can control fires involving the major workplace fire hazards.
 - (4) Names or job titles of the individual(s) responsible for maintenance and inspection of fire protection/detection equipment or systems.
 - (5) Names or job titles of the individual(s) responsible for controlling potential fuel sources that may create a fire hazard.
 - (6) A list of flammable/combustible materials.
 - (7) Procedures for handling, storage and disposal of flammable and combustible waste materials.
- b. Employees shall be given awareness training to apprise them of the potential fire hazards associated with materials and processes which they are exposed to in their work area. This training shall be given upon initial assignment.
 - c. A written record of the training and attendance shall be maintained.
 - d. A written maintenance schedule shall be established to ensure thermostats and thermal overload devices on heat producing equipment are regularly inspected and maintained to prevent accidental ignition of combustible materials and included as part of the Fire Prevention Plan.
 - e. The written Fire Prevention Plan shall be kept in the workplace and made available for employee review.
 - f. Upper Air issues related to hydrogen fire prevention shall be addressed in accordance with WSOM draft, Chapter B-45. Employees involved in maintenance of Upper Air Sites shall receive training in accordance with WSOM draft, Chapter B-45.

6.3.3 General Fire Prevention Guidelines. The following guidelines shall be followed at all NWS facilities and associated sites to help reduce the potential for fire at these locations:

- a. Flammable material shall be stored and used in accordance with NWS Occupational Safety and Health Procedure 16, "Flammable and Combustible Liquid Storage."

- b. Materials such as oily rags shall be collected in fire-safe container and disposed of properly by a licensed contractor.
- c. Electrical circuits shall not be loaded beyond their rated capacity.
- d. Equipment with frayed or damaged electrical cords or plugs shall be removed from service.
- e. Portable electric heating devices shall be in good physical condition and be UL listed. The manufacturer's recommendations for clearances shall be followed when these devices are in use.
- f. Combustible materials shall not be stored under stairways or in exit ways.
- g. Spills of combustible or flammable materials shall be cleaned up immediately. Contaminated materials shall be disposed of properly in accordance with Procedure #7, "Hazard Communication."
- h. Smoking is not permitted within 50 feet of flammable material storage areas.
- i. Fire hydrants, building fire department connections and other fire suppression related fixtures shall be kept clear of plants, materials and other items that may block their access.
- j. Monthly inspections shall be conducted for egress paths, combustible loadings, chemical storage and general facility conditions.

6.3.4 Emergency Alarm/Notification Systems. NWS facilities with more than ten employees shall have an alarm system to warn employees of workplace emergencies. The following criteria not only apply to fire alarms but also to alarms used to notify employees of other workplace emergencies.

- a. The alarm shall be capable of being seen and/or heard above ambient light and noise levels in the work area. Sight- or hearing-impaired individuals may be notified by flashing lights, vibrating devices, air fans or other tactile devices.

<p>NOTE: Individual smoke detectors that do not report to a central alarm panel or are not interconnected in such a way that when one detector activates all detectors alarm, shall be able to be heard in rooms or hallways adjacent to the location in which the detector is installed.</p>
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- b. Communication systems such as intercoms and telephones may serve as an employee alarm system provided that all emergency messages have priority over all non-emergency messages.
- c. If the ringer on a telephone system is used as an employee alarm, the ring shall be distinctive and recognizable as a signal to evacuate the work area.

- d. Employees shall be made aware of, and instructed in the proper use of, the preferred means of reporting emergencies such as pull-boxes, telephones, public address systems, etc.
- e. When the telephone system is used as the preferred method of reporting emergencies, emergency numbers shall be posted near telephones, employee notice boards and other conspicuous locations.
- f. All devices, components, combination of devices or systems constructed and installed to act as an employee alarm system shall be approved by their appropriate agency or organization.
- g. All alarm systems shall be maintained in operating condition except when undergoing repairs or maintenance.
- h. A test of the reliability and adequacy of non-supervised employee alarm systems shall be made every two months.
- i. Power supplies shall be maintained as often as necessary to assure the alarm system is fully operational. A back-up means of alarm such as employee runners shall be provided when systems are out of service.
- j. Alarm circuitry that is capable of being supervised and installed after January 1, 1981, shall be supervised and shall provide positive notification whenever a deficiency exists in the system.
- k. All supervised alarm systems shall be tested at least annually for reliability and adequacy.
- l. Manually operated alarm devices such as pull-boxes shall be unobstructed, conspicuous and readily accessible.
- m. Fire drills shall be conducted at least annually and can be done when the alarm systems are being tested.

6.3.5 Egress. Every building or structure, new or old, designed for human occupancy shall be provided with exits sufficient to permit the prompt escape of occupants in case of fire or other emergency. The design of exits and other safeguards shall be such that reliance for safety to life in case of fire or other emergency shall not depend solely on any single safeguard; additional safeguards shall be provided for life safety in case any single safeguard is ineffective due to some human or mechanical failure.

- a. Every building or structure shall be provided with an adequate number of exits to ensure all individuals have a quick direct route of escape in an emergency and to avoid undue danger to the lives and safety of the individuals from fire, smoke, fumes or resulting panic during the period of time reasonably necessary to escape the building.

- b. Emergency lighting shall be provided in the event power and/or illumination is lost during an emergency situation to allow for a safe means of egress.
- c. Exits shall be arranged and maintained to provide free and unobstructed egress from all parts of the building at all times when it is occupied.
- d. Doors shall be designed to allow free escape from the inside of the building during an emergency.
- e. Exits shall be clearly visible and marked along their entirety in such a manner that the direction for escape from any point in the building is unmistakable to all occupants. Attachment B provides criteria for the placement of exit signs.
- f. All normally occupied work areas shall have a minimum of two exits from the area, and the exits shall be arranged in such a manner to minimize the threat of both exits being blocked by one fire or other emergency condition. An exit is defined as a means of egress which is separated from all other spaces of the building or structure by construction or equipment placement. For example, an office building with a central hallway with offices on each side would use the hallway as the start of the exit. The office is not considered part of the exit.

<p>NOTE: <i>WSR-88D Radar sites, Wind-profiler sites and Upper Air Inflation buildings are not considered normally occupied work areas.</i></p>

- g. Exit doors serving more than fifty people shall swing out with exit travel and not open in against the flow of people.
- h. Exits shall not require individuals to travel from a low hazard content area through a ordinary hazard content area or from a low hazard content area through a high hazard content area to the exit discharge. For example, travel from an office area through an electrical room to the outside as part of the exit way is not permitted.
- i. The means of egress, exit, exit way and exit discharge shall all be constructed to meet the requirements of the applicable local building codes or NFPA 101 "Life Safety Code."
- j. Corridors in Office Occupancies shall feed into an exit, or another corridor, and be at least 44 inches wide. All aisles between modular office partitions that serve more than 12 people shall be considered corridors and shall meet this requirement. All aisles between modular office partitions that serve 12 or fewer people shall be called aisles (see "k" below).
- k. All aisles in Industrial Occupancies and between modular office partitions that serve 12 or fewer people shall be at least 36 inches wide except:

- (1) For projections, not to exceed 3.5 inches, and less than 42 inches in height.
- (2) Facilities built prior to 1988 may have aisles 28 inches wide.
- l. All aisles between movable furniture or modular office partitions that typically serve 6 or fewer people shall be at least 28 inches wide.
- m. Doorways and cubicle entryways shall be at least 28 inches wide.
- n. All exits shall discharge directly to the street, or to a yard, court or other open space that gives safe access to a public way. The area to which the exit discharges shall be of adequate width and size to provide all persons leaving the building with ready and safe access to the street.
- o. The exit discharge and exterior way of exit shall be kept clear of accumulations of snow and ice or other materials that impede its usage.
- p. ADA Accessibility Guidelines for Buildings and Facilities shall follow Section 4, "Accessible Elements and Spaces: Scope and Technical Requirements."

6.4 Quality Control

6.4.1 Regional or Operating Unit Environmental/Safety Coordinators

- a. Shall perform an annual assessment of the regional headquarter facilities or operating unit to monitor and promote compliance with the requirements of this procedure.
- b. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements of this procedure every two years.

6.4.2 Station Manager

Shall review, or delegate review, of this procedure on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

6.4.3 NWS Headquarters (NSWH)

- a. The NWS Safety Office shall perform an annual assessment of the NWSH facilities to ensure that the facilities are in compliance with this procedure.
- b. The NWSH Safety Office shall periodically perform an assessment of the regional headquarters and field offices to ensure compliance with this procedure. The frequency of these regional and field office assessments shall be determined by the NWSH Safety Office.

- c. Requests for clarification concerning this procedure shall be directed to the NWSH Safety Office.

6.5 Responsibilities

6.5.1 Regional or Operating Unit Environmental/Safety Coordinators*

- a. Shall monitor and coordinate to promote compliance with the requirements of this procedure for the regional headquarters, and field offices or operating units.
- b. Shall ensure that fire extinguishers are properly located, tested, and maintained at the regional headquarters facilities and operating unit facilities.
- c. Shall ensure that a written fire protection plan is developed and maintained at the regional headquarters facilities and operating unit facilities.
- d. Shall ensure employee alarm systems are installed, tested, and maintained at the regional headquarters facilities and operating unit facilities.

6.5.2 Station Manager*

- a. Shall have oversight over the implementation of this procedure, and ensure that the requirements of this procedure are followed by individuals at the NWS facility.
- b. Shall ensure that fire extinguishers are properly located, tested, and maintained.
- c. Shall ensure that a written fire protection plan is developed and maintained.
- d. Shall ensure employee alarm systems are installed, tested, and maintained.
- e. Shall ensure that initial and periodic inventory of fire extinguishers, emergency lights and other safety equipment is accomplished and adequate stock is maintained.

6.5.3 Safety or Environmental/Safety Focal Point*

Shall ensure that any responsibilities delegated to them by the Station Manager are implemented in accordance with the requirements of this procedure.

6.5.4 Employees

- a. Individual employees affected by this procedure are required to read, understand and comply with the requirements of this procedure.
- b. Report unsafe or unhealthful conditions and practices to their supervisor or safety focal point.

NOTE:

* - Reference NWS PD 50-11 for complete list of responsibilities
<http://www.nws.noaa.gov/directives/050/pd05011a.pdf>

6.6 References

Incorporated References. The following list of references is incorporated as a whole or in part into this procedure. These references can provide additional explanation or guidance for the implementation of this procedure.

- 6.6.1 American National Standards Institute, as applicable.
- 6.6.2 National Fire Protection Association, NFPA 10, “Fire Extinguishers.”
- 6.6.3 National Fire Protection Association, NFPA 70, “National Electrical Code.”
- 6.6.4 U.S. Department of Labor, Occupational Safety and Health Administration, 29 CFR 1910.38, “Employee Emergency Plans and Fire Prevention Plans.”
- 6.6.5 U.S. Department of Labor, Occupational Safety and Health Administration, 29 CFR 1910.157, “Portable Fire Extinguishers.”
- 6.6.6 U.S. Department of Labor, Occupational Safety and Health Administration, 29 CFR 1910.164, “Fire Detection Systems.”
- 6.6.7 U.S. Department of Labor, Occupational Safety and Health Administration, 29 CFR 1910.165, “Employee Alarm Systems.”
- 6.6.8 U.S. Department of Labor, Occupational Safety and Health Administration, 29 CFR 1910, Subpart L, Appendix A, “Fire Protection.”
- 6.6.9 NWS Occupational Safety and Health Procedure 5, “Emergency Action Plan.”
- 6.6.10 Americans with Disabilities Act (ADA) Section 4, “Accessible Elements and Spaces: Scope and Technical Requirements.”

6.7 Attachments

- Attachment A. Fire Extinguisher Hydrostatic Test Frequency
- Attachment B. Exit Marking and Placement Criteria
- Attachment C. Fire Prevention Plan Template
- Attachment D: Fire Prevention Plan (WFO Springfield, MO)

ATTACHMENT A

Fire Extinguisher Hydrostatic Test Frequency

Type of Extinguisher	Hydro-static Test Interval (years)
Soda acid (soldered brass shells)	(1)
Soda acid (stainless steel shell)	5
Cartridge operated water and/or antifreeze	5
Stored pressure water and/or antifreeze	5
Wetting agent	5
Foam (soldered brass shells)	(1)
Foam (stainless steel shell)	5
Aqueous Film Forming foam (AFFF)	5
Loaded stream	5
Dry chemical with stainless steel	5
Carbon Dioxide	5
Dry chemical, stored pressure, with mild steel, brazed brass or aluminum shells	12
Dry chemical, cartridge or cylinder operated, with mild steel shells	12
Halon 1211	12
Halon 1301	12
Dry powder, cartridge or cylinder operated with mild steel shells	12
(1) Extinguishers having shells constructed of copper or brass joined by soft solder or rivets shall be removed from service.	

ATTACHMENT B

Exit Marking and Placement Criteria

- B.1 Exit Marking. Exits shall be marked by a readily visible sign. Access to exits shall be marked by readily visible signs in all cases where the exit or way to reach it is not immediately visible to the occupants.
- a. Any door, passage or stairway which is neither an exit nor a way of exit access and which is so located or arranged as to be likely to be mistaken for an exit, shall be identified by a sign reading "No Exit" or shall be identified by a sign indicating its actual character such as "To Basement," "Storeroom," "Linen Closet." "No Exit" signs shall not be illuminated.
 - b. Every sign designating an exit or way of exit access shall be readily visible and distinguishable from its background.
 - c. A sign reading "Exit" with an arrow indicating the directions shall be placed in every location where the direction of travel to reach the nearest exit is not immediately apparent.
 - d. Every exit sign shall be suitably illuminated by a reliable light source giving a value of not less than 5-foot candles on the illuminated surface. The light source shall continue to illuminate the sign for a minimum of 90 minutes in the event of a power outage.
 - e. Exits signs shall remain illuminated when normal illumination in the area is reduced.
 - f. Every exit sign shall have the word "Exit" in plainly legible letters not less than 6 inches high, with the principal strokes of letters not less than 3/4-inch wide.
 - g. If the direct means to an exit is readily apparent, an exit sign is not required. For example, a room with one door leading directly to the outside would not require an exit sign.

ATTACHMENT C

Fire Prevention Plan (*template*)

FIRE PREVENTION PLAN

for

Facility Name _____

Facility Address _____

DATE PREPARED: _____

LIST OF MAJOR FIRE HAZARDS

The following materials and equipment (check applicable) are present on site and can become the potential fire hazards when handled improperly or if in poor working condition:

- 9 Electrical circuits, wiring and extension cords
- 9 Electrical Equipment
- 9 Coffee and tea pots
- 9 Toasters
- 9 Portable Heaters
- 9 Flammable/combustible materials
- 9 Welding equipment
- 9 Oil-soaked rags
- 9 Other_____
- _____
- _____
- _____

FLAMMABLE/COMBUSTIBLE MATERIALS

STORAGE AND HANDLING

The following flammable/combustible materials are stored or/and used on site (List diesel fuel tanks, heating oils, gasoline, hydrogen, solvents, etc.):

[illegible]

Storage:

- ! Flammable/combustible materials shall be stored in approved flammable storage cabinets. Flammable cabinets are located in _____
- ! The storage of flammable/combustible liquids shall not physically obstruct any means of egress from the building or work area.
- ! Rooms used for storing flammable/combustible materials should be well ventilated.
- ! “NO SMOKING” signs shall be posted near areas where flammable/combustible materials are stored or used.
- ! The minimum practical amount of flammable/combustible materials should be kept on hand.
- ! Flammable/combustible solvents shall be stored in the approved safety cans. Portable containers shall not exceed the maximum capacity of 5 gallons.
- ! Flammable paints and oils used for maintenance purpose, may be stored outside of approved storage areas if kept at the work area for less than 10 calendar days.
- ! Water-reactive materials shall not be stored in the same room as flammable/combustible liquids.
- ! Liquified petroleum storage tanks (if applicable) shall be guarded to prevent damage from moving vehicles.
- ! Fire extinguishers, Class B, shall be located within 10 feet from the flammable storage areas.

Handling:

- ! Containers of flammable and combustible liquids have to be tightly sealed.
- ! Combustible waste materials and residues shall be kept to a minimum and disposed of daily.
- ! Oil- and solvent-soaked rags shall be placed in approved waste containers.
- ! Spills of flammable/combustible materials shall be cleaned up immediately. Absorbent materials used for spill clean up shall be disposed of properly.
- ! Flammable materials shall not be used near sources of ignition (e.g., open flames, smoking, lightning, electrical and mechanical sparks, etc.).

ELECTRICAL EQUIPMENT AND FIRE PREVENTION

Any electrical equipment is a potential source of fire. The fire can be caused by short circuits, overheated equipment, and failure of current limiters, thermal sensors or other devices. To prevent these hazards, the following safety practices should be in place:

- ! Electric wiring and equipment shall be in accordance with the current edition of the National Electrical Code, National Fire Protection Association (NFPA 70) and American National Standards Institute (ANSI) requirements.
- ! A fuse or a circuit breaker shall not have a rating higher than specified for a circuit.
- ! Frames of electrical equipment shall be grounded.
- ! Electrical circuits shall not be overloaded at any time. Only one heat producing appliance may be plugged in the socket.
- ! Wiring should be covered when joined (e.g., outlets, switches, junction boxes, etc.).
- ! Utility lights shall be furnished with wire guards.
- ! Electrical motors shall be kept clean and in good working condition to prevent them from overheating.
- ! Periodic inspections of electrical equipment shall be performed to detect:
 - a. Damaged electrical cords, wiring and fittings,
 - b. Defective electric tools that spark,
 - c. Loose electrical connections,
 - d. Machinery that comes in contact with flammable materials, and
 - e. Overloaded circuits.

HOUSEKEEPING PRACTICES

The following housekeeping practices should be in place to prevent fire hazards:

- ! General work areas such as offices and shops must be kept orderly and free of trash.
- ! Discarded packing material or scrap should not be accumulated inside the buildings.
- ! A sufficient number of trash receptacles and waste baskets should be placed at each work area and should be emptied daily.
- ! Oil or chemical-soaked rags should be placed into a covered metal or other approved containers.
- ! Dust and debris should be kept off machinery or electrical equipment.
- ! Spills of flammable/combustible materials should be cleaned up promptly.
- ! Corridors and traffic areas shall be free of boxes or other obstructions. Care should be taken of deliveries - boxes must be kept away from traffic areas.
- ! Combustible materials should be minimized.

FIRE PROTECTION EQUIPMENT AND SYSTEMS

Types:

The following types of fire protection equipment and/or systems are available at the facility (check applicable):

9 Portable Fire Extinguishers (circle applicable and specify quantity)

- a. Carbon Dioxide: _____
- b. Dry Chemical _____
- c. Other _____

NOTE: Halon is still allowable but is being phased out. There are however a number of alternatives on the market.

Inspection/maintenance: Visual (Monthly) / Mechanical (Annually)

Hydrostatic testing: Carbon Dioxide - Every 5 years

Halon 1301 - Every 12 years

9 Automatic Sprinkler Systems

Main drain flow test: Annually

Opening of inspector's test valve: Every two years

9 Fixed Fire Extinguishing Systems (circle applicable)

- a. Dry Chemical
- b. Gaseous Agent
- c. Water Spray and Foam

Inspection/maintenance: Semi-annually

(Weight and pressure check of refillable and non-refillable containers)

9 Fire Detection Systems

Inspection/maintenance/testing: Annually and as often as needed

Cleaning and sensitivity adjustments: At periodic intervals

Fire Alarm Systems

Maintenance and replacement of power supply: As often as needed

Testing of non-supervised alarm systems: Every two months

Testing of supervised alarm systems: Once a year

Inspection and Maintenance:

The following personnel are ultimately responsible for inspection and maintenance of fire protection equipment and/or systems.

Name or Job Title	Type of Equipment

The status of the fire protection equipment inspection/maintenance activities is shown below:

Type of Equipment	Last Inspection/ Maintenance Date	Name and Phone Number of Contractor

Date / /

ATTACHMENT D

**Fire Prevention Plan for
WFO Springfield, MO**

DATE PREPARED: September, 14, 1999

LIST OF MAJOR FIRE HAZARDS

The following materials and equipment (check applicable) are present on site and can become the potential fire hazards when handled improperly or if in poor working condition:

- 9 Electrical circuits, wiring and extension cords.

- 9 Electrical Equipment

- 9 Coffee and tea pots

- 9 Toasters

- 9 Portable Heaters

- 9 Flammable/combustible materials.

- 9 Welding equipment.

- 9 Oil-soaked rags.

- 9 Other_____
- _____
- _____
- _____

FLAMMABLE/COMBUSTIBLE MATERIALS**STORAGE AND HANDLING**

The following flammable/combustible materials are stored or/and used on site (List diesel fuel tanks, heating oils, gasoline, hydrogen, solvents, etc.):

Name	Quantity	Type of Container	Location
Hornet & Wasp Killer	15 oz.	15 oz. spray can	County Warning Area
Insect Repellant	14 oz.	14 oz. spray can	County Warning Area
Isopropyl Alcohol	16 oz.	16 oz. bottle	County Warning Area
Laquer Thinner	32 oz.	32 oz. can	County Warning Area
WD-40	14 oz.	14 oz. spray can	County Warning Area
#2 Diesel Fuel	1000 gallons	1000 gallons	Generator Building
Battery Cleaner	14 oz.	14 oz. can	Generator Building
Battery Protector	4 oz.	4 oz. can	Generator Building
Isopropyl Alcohol	2 gallon	1 gallon containers	Generator Building
Kleen Glean	6oz.	6oz. Can	Generator Building
Lacquer thinner	32 oz.	32 oz. container	Generator Building
Lubricating Oil	1 quart	1 quart container	Generator Building
Spray Laquer	16 oz.	16 oz. can	Generator Building
Spray Paint	10 oz.	10 oz. can	Generator Building
Spray Paint	12 oz.	12 oz. can	Generator Building
Spray Paint	12 oz.	12 oz. can	Generator Building
Spray Paint	24 oz.	12 oz. cans	Generator Building
Torn-Lable	8 oz.	8 oz. can	Generator Building
Truck and Van Paint	11 oz.	11 oz. spray can	Generator Building
Blue Shower	1 can	1 can	On site office
Correction Fluid -	0.68 fl. oz.	0 .68 fl. oz. bottle	On site office
Daal Magnetic eye	4oz.	4oz. bottles	On site office
Freon TP-35	7oz.	7oz. bottle	On site office
Head Cleaner	2oz.	2oz. bottle	On site office
Home Best Insect	1 gallon	1 gallon jug	On site office
Klear Clean	6 oz.	6 oz. bottles	On site office
Lubricating oil	2oz.	2oz. Bottle	On site office
Park Horse	8oz.	1- 8oz. spray can	On site office

Name	Quantity	Type of Container	Location
Spray paint	33 oz.	3- 11oz. cans	On site office
StatFree Spray	96 oz.	3- 32oz. bottles	On site office
Staticide	1qt.	1- 1qt. bottle	On site office
WD-40	12.9 oz.	1- 12.9 oz. can	On site office
#2 Diesel Fuel	500 gallons	250 gallon tank	RDA Shelter
Isopropyl Alcohol	1pt.	1pt. bottle	RDA Shelter
Krylon	12 oz.	12 oz. spray can	RDA Shelter
Paint	1pt.	1pt. can	RDA Shelter
Paint	1pt.	1pt. can	RDA Shelter
Parks	32 oz.	32 oz. spray bottle	RDA Shelter
WD-40	11oz.	11oz. Spray can	RDA Shelter
Hydrogen	60 (2000 psi containers)	2000 psi containers	UAIB
WD-40	9 oz.	9 oz. spray can	UAIB
Propane	250 Gallon	250 gallon tank	WXJ-61Avilla, MO

Storage:

- ! Flammable/combustible materials shall be stored in approved flammable storage cabinets. Flammable cabinets are located in the generator building storage room.
- ! The storage of flammable/combustible liquids shall not physically obstruct any means of egress from the building or work area.
- ! Rooms used for storing flammable/combustible materials should be well ventilated.
- ! “NO SMOKING” signs shall be posted near areas where flammable/combustible materials are stored or used.
- ! The minimum practical amount of flammable/combustible materials should be kept on hand.
- ! Flammable/combustible solvents shall be stored in the approved safety cans. Portable containers shall not exceed the maximum capacity of 5 gallons.
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- ! Fire extinguishers, Class B, shall be located within 10 feet from the flammable storage areas.

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 - c. Loose electrical connections,
 - d. Machinery that comes in contact with flammable materials, and
 - e. Overloaded circuits.

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- ! Corridors and traffic areas shall be free of boxes or other obstructions. Care should be taken of deliveries - boxes must be kept away from traffic areas.
- ! Combustible materials should be minimized.

FIRE PROTECTION EQUIPMENT AND SYSTEMS*Types:*

The following types of fire protection equipment and/or systems are available at the facility (check applicable):

- 9 Portable Fire Extinguishers** (circle applicable and specify quantity)
- a. Carbon Dioxide: 4
 - b. ABC Dry Chemical: 7

NOTE: Halon is still allowable but is being phased out. There are however a number of alternatives on the market.

Inspection/maintenance: Visual (Monthly) / Mechanical (Annually)

Hydrostatic testing: Carbon Dioxide - Every 5 years

ABC Dry Chemical - Every 12 years

Inspection and Maintenance:

The following personnel are ultimately responsible for inspection and maintenance of fire protection equipment and/or systems.

Name or Job Title

William Davis, Meteorologist In Charge

Larry Dooley, Focal Point

The status of the fire protection equipment inspection/maintenance activities is shown below:

Type of Equipment	Last Inspection/ Maintenance Date	Name and Phone Number of Contractor
Fire Extinguisher	August 1999	Kenco Fire Equipment 831-7669

Date ____/____/____